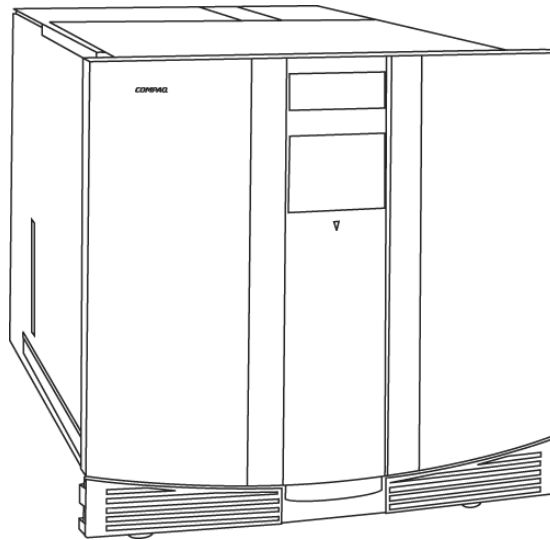


Overview



HP StorageWorks MSL5052SL Tape Library

At A Glance

- The MSL5052SL Tape Library is the latest addition to HP tape automation products for the departmental automation segment. It offers high availability features with hot plug drives and dual redundant power supply.
- It offers 11.44 TB (2:1 compression) of storage, providing the highest capacity in its class in a compact 10U form factor, in tabletop or rackmount configurations.
- It is scalable up to four modules in a rackmount configuration to provide a maximum of 45.76 TB (2:1 compression) of data backup capacity.

Product Highlights

HP StorageWorks MSL5052SL Tape Library

The HP StorageWorks MSL5052SL Tape Library comes with 52 media slots (including two mail slots) and up to four HP StorageWorks SDLT 110/220 GB Tape Drives (number of drives determined by SKU chosen).

MSL5052, 0 DR, LVD, RM	255102-B21
MSL5052SL, 2 SDLT 110/220 GB Drive, LVD, Tabletop Library	249490-B21
MSL5052SL, 2 SDLT 110/220 GB Drive, LVD, Rackmount Library	249491-B21
MSL5000 Field Upgrade SDLT 110/220 GB Drive, LVD	231823-B22

Each library installation will require, (1) library system, (1) geographically specific power cord, (1) SCSI cable for each SDLT drive pair, and SDLT media with bar code labels for each MSL5052SL. Multiple configurations will require additional pass-through kits.

The minimum orderable configuration consists of a single library system (for instances where customer already has the necessary SCSI cables, power cord, and media).

Installation services may also be ordered for customers who want to have a certified HP Engineer perform an onsite library installation.

MSL5052SL Library Customer Benefits

- High availability feature for minimum downtime
- Reliable, cost effective backup, restoration and archival solution that fits a growing company's storage needs
- High storage capacity to back up large amounts of data in a small backup window
- Easy to operate which equates to lower cost of ownership
- Compact form factor only taking 10U of rack space with a single module
- Removable magazines for offsite backup storage
- Multi-unit scalability for future growth and investment protection
- Compatible with a wide variety of operating systems, software applications, and server platforms

Key Features

- Hot plug drives for online repair and capacity expansion, without interrupting library operations for minimum downtime
- Dual redundant power supplies to provide higher level of availability and reliability
- Up to four SDLT 110/220 GB drives, with a throughput of 11 MB/s (native) per drive, for a backup performance of up to 158.4 GB/hr for a single unit
- Ultra2 LVD SCSI Interface
- 52 data slots (including two mail slots) for a native capacity of 5.72 TB, giving the highest density in a 10U form factor in the departmental segment (including one mail slot for quick load/unload and removable magazine)
- Five cPCI slots for added functionality through add-on cards in future
- GUI-based touch screen panel for easy library operation
- Available as either a rackmount or tabletop configuration
- Multi-unit modular scalability, up to four units, for future growth and investment protection. In addition can also scale with the MSL5026 library using the passthrough mechanism

High Availability and Hot Pluggable Drives

As data becomes more mission critical, and downtime becomes more costly, customers are requiring high availability features on tape automation devices. The HP StorageWorks MSL5052SL Tape Library uses hot pluggable SDLT drive carriers, allowing drive replacement without interrupting backup and restore functions. These hot pluggable drive trays allow for easy scalability of performance, as well as provide an easy upgrade path towards future SDLT drive technologies.

NOTE: The MSL5052SL accepts only library ready drives specifically modified for use in the MSL5052SL library.

Proven Reliability

Using SDLT tape drives, and proven library robotics with a rating of 1,000,000 robot load/unload cycles, the MSL5052SL provides the necessary high reliability for today's demanding environment.

Product Highlights

SDLT Technology Digital Linear Tape uses a proven linear recording technology, a highly accurate tape guide system, and a read after write correction system to provide high-capacity, high reliability data backup and restoration. DLT has fast become the industry-standard secondary storage tape format for departmental and enterprise backup. The new generation SDLT tape drive, provides enhanced capacity and backup performance and includes several new features such as Laser Guided Magnetic Recording (LGMR) technology, Pivoting Optical Servo (POS), Magneto-Resistive Cluster Heads (MRC), Partial Response Maximum Likelihood (PRML) channel technology and Backward Read Compatibility with earlier generation of DLT drives (to be able to read media written in DLT type IV format).

Investment Protection The MSL5052SL can be upgraded to Ultrium tape drives simply by removing the current tape drives and magazines and replacing them with the desired Ultrium drive. The MSL5052SL can also be upgraded to SDLT 320 tape drives by simply removing the current tape drives and replacing them with SDLT 320 tape drives.

Manageability StorageWorks Tape Storage Management (TSMC) software provides diagnostics and easy firmware upgrade capabilities.

Multi-unit modular Scalability The MSL5052SL has the capability for multi-unit scalability – up to four modules can be scaled together in a "virtual library". The first two modules are linked using Pass-Through Mechanism, which has the elevator mechanism for tape movement and a 10U Pass-Through Extender. Addition of subsequent modules requires additional 10U Pass-Through Extender (one for each additional module).

Server Support

NOTE: Some servers may no longer be available for purchase.

ProLiant DL760	HP lxr8500
ProLiant DL580 G2	HP lh6000
ProLiant ML750	HP lh6000r
ProLiant ML530 G2	HP lt6000r
ProLiant ML570 G2	HP tc4100
ProLiant DL380 G2	HP tc3100
ProLiant ML370	HP lh3000
ProLiant ML350	HP lc2000r
ProLiant DL360	HP lp2000r
ProLiant DL320	HP lp1000r
ProLiant ML350	HP e200
AlphaServer GS320, GS160, GS 80	HP e800
AlphaServer ES40	Superdome
AlphaServer 4X00	rp8400
AlphaServer DS20E	rp7400 (N class)
AlphaServer 1200	rp5400 series (L Class)
AlphaServer DS10/DS10L	rp2400 series (A class)
Dell PowerEdge	K Class
IBM Netfinity	D Class
IBM RS6000	B-class workstations
Sun Sparc	C-class workstations
	J-class workstations

Product Highlights

Application Support	Automation and Network Utilities	HP Insight Manager v7.0 HP Tape Storage Management Console v2.3 (NT/2000) and 2.0 (NetWare) MRU (media robot utility) v1.4 HP StorageWorks Library and Tape Tools v3.1
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ISV/OS Support	For the most up-to-date ISV & OS support please consult the Enterprise Backup Solutions Compatibility Matrix at http://www.hp.com/go/ebs .
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Media Partitioning Support	Media partitioning is the capability to create logical pools or partitions in a tape library. The MSL tape libraries media partitioning capability supports multiple drives types within a single library or in a multi-unit stack. For current software supported, please consult the Enterprise Backup Solutions Compatibility Matrix at http://www.hp.com/go/ebs .
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Software Components	SmartStart	Server configuration and software integration tool from Hewlett-Packard
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Service and Support, HP Care Pack and Warranty Information

HP Installation and HP Care Pack Information

Hewlett-Packard provides a one year, limited warranty, together with phone support for the duration of the warranty. In order to provide ease of installation, maximize uptime and ROI, Hewlett Packard provides a range of upgradeable service options.

Description	Band For MSL5026 1 or 2 drive library	Band For Drive upgrade kits	Installation Band	Part Number
Initial Tape Library Installation	464	N/A	5DS	HA113A1
Initial Tape Library Implementation Into SAN	464	N/A	5DS	HA114A1
Subsequent Tape Installation	N/A	8G5	5DU	HA113A1
HW, "3-year", "next-day", "on-site"	464	8G5	N/A	HA101A3
HW, "3-year", "4-hour", "13 x 5", "on-site"	464	8G5	N/A	HA103A3
HW, "3-year", "4-hour", "24 x 7", "on-site"	464	8G5	N/A	HA104A3
Support plus, "3-year"*	464	8G5	N/A	HA109A3
Support plus 24, "3-year"*	464	8G5	N/A	HA110A3

Hewlett Packard also offers 1-year options for the services quoted above.

* Support Plus covers Hardware support only.

Due to the complexities involved with the initial installation of an enterprise Library into a SAN environment, Hewlett Packard recommends that customers take advantage of the SAN Implementation Service (HA114A1). This service covers pre-installation preparation activities, installation and configuration of the library and router, configuration of hosts and switches, verification testing and customer orientation.

In order to maximize ROI and product uptime, and minimize the cost of ownership, Hewlett-Packard recommends the 3-year, 24 x 7 service options. These offerings will ensure that any product issue can be tackled when they occur (most back up issues will occur outside standard business hours) and that the service coverage regarding period, covers the minimum expected life of the host system.

Auto Power On

Auto-power-on is a feature that allows the library to reboot in the event of a power failure without operator intervention. This feature must be installed by an authorized service technician.

Description	Band	Product Number
Auto-Power-On for MSL5052/5060	5AW	HA124A1

Related Options

	Description	UPC Code	Part Number
MSL5052SL Library System	MSL5052, 0 Drive, LVD, RM	720591169749	255102-B21
	MSL5052SL, 2 SDLT 110/220 GB Drive, LVD, TT	720591204204	249490-B21
	MSL5052SL, 2 SDLT 110/220 GB Drive, LVD, RM	720591204174	249491-B21

Supplied with each Library Unit

Library Unit (pre-configured with drives)
 Documentation Kit
 EFIJS Translation CD
 Users Guide
 Diagnostic diskette/Software Guide
 Warranty Card
 Safety Card
 Driver CD
 (1) SDLT 110/220 data Cartridge
 Bar Code Labels
 SCSI Terminators (1 per drive)
 SCSI Jumper Cable VHDCI
 Diagnostic Cable (for PC attach)
 Software: Tape Storage Management Console Media Robot Utility

Power Cord (Pair Required)	Power Cord, US/Canada/Mexico* <i>*(shipped with all units)</i>	720591673581	227099-001
	Power Cord, (Australia/China/New Zealand)	720591673567	227098-011
	Power Cord, (South East Asia/India)		157220-AR1
	Power Cord, (Central Europe)		157215-021
	Power Cord, (United Kingdom/Hong Kong)	720591547288	157216-031
	Power Cord, (Switzerland)	743172633156	157219-111
	Power Cord, (Italy)		157217-061
	Power Cord, (Denmark)		157218-081
	Power Cord, (Japan)		139867-006

NOTE: US/Canada/Mexico power cords are shipped with all units. Order geographically specific power cords as needed. (Unit requires 2 power cords – one for each power supply.)

Auto-Power-On Auto-Power-On allows the library to automatically reboot in the event of a power failure. For details on ordering this option, please visit the "Installation and HP Care Pack Services" section of this document.

Drive, capacity, and memory upgrade kits	MSL5KField Upgrade SDLT 110/220 GB Drive, LVD	720591730017	231823-B22
	MSL5000 SDLT160/320 Upgrade drive in hot plug canister	613326517949	293475-B21

Related Options

Media and Bar Code Labels	MSL5000 dual magazine DLT/SDLT pack (2 x 13 slot magazines, left and right)		232136-B21
	HP Super DLTtape 1 Data Cartridge		C7980A
	HP Super DLTtape 1 Pre-labeled Data Cartridge, 20 pack (NA)		C7980AL
	HP Super DLTtape 1 Pre-labeled Data Cartridge, single pack (EURO)		C7980L
	HP SDLT Cleaning Cartridge		C7982A
	HP SDLT Bar Code Label Pack		Q2003A

NOTE: Option kit includes 100 data and 10 cleaning labels.

SCSI Cables	SCSI Cable, VHDCI/VHDCI, 6 feet	743172660817	341174-B21
	SCSI Cable, VHDCI/VHDCI, 12 feet	743172660824	341175-B21
	SCSI Cable, VHDCI/Wide, 6 feet	743172660831	341176-B21
	SCSI Cable, VHDCI/Wide, 12 feet	743172660848	341177-B21
	SCSI Cable, VHDCI/Wide, 10 meter	720591469108	201160-B21

NOTE: Check the cable-adapter matrix for tape libraries on:

<ftp://ftp.compaq.com/pub/products/storageworks/tape-and-optical-storage/adapter-cable-matrix.pdf>

FC Host Bus Adapters	HSC-eff Tachlite Fibre Channel Adapter		A6684A
	HSC Tachlite Fibre Channel Adapter		A6685A
	PCI 4X 2Gbps single port Fibre Channel Adapter		A6795A
	1 Gb PCI Fibre Channel Adapter		176479-B21
	2 Gb PCI Fibre Channel Adapter		245299-B21

For more information on FC HBAs please consult the EBS connectivity matrix at

<http://www.hp.com/go/ebs.com>

SCSI Host Bus Adapters	ProLiant/NetServer		
	64-bit 66 MHz PCI Dual Channel Wide Ultra3 SCSI adapter	743172876379	129803-B21
	Ultra3 LVD, single channel controller	743172991447	154457-B21
	HP-UX		
	Ultra 2 LVD single port		A5149A
	Ultra 2 LVD dual port		A5150A
	Ultra3 LVD single port		A6828
	Ultra3 LVD dual port		A6829
	LVD single port		A4999A

For more information on SCSI HBAs please consult the EBS connectivity matrix

at <http://www.hp.com/go/ebs.com>

Hewlett-Packard Fibre Channel to SCSI Router (optional)	Network Storage Router (required for SAN configuration)		
	Network Storage Router M2402 (2FC X 4 LVD SCSI)	613326254516	262653-B21
	MSL5000 embedded Fibre option E1200-160 – graphite (configured in the compact PCI slot within the MSL library – graphite colored)	613326254417	330728-B21
	Network Storage Router N1200 (1FC x 2 LVD SCSI)	613326408087	280823-B21

Pass-through mechanism	MSL5000, Universal Pass-through mechanism (includes elevator mechanism and router, required to connect first two units in a stack)	613326628447	304825-B21
	MSL5000, 10U Pass-through Extender	720591743581	231824-B23

Related Options

Rack mounting Kits	MSL5000 system/e RM kit (HP racks)	613326628423	304826-B21
	MSL5000 TT-RM KIT, ProLiant Rack	720591734336	231894-B22
	MSL5000 TT-RM KIT, Alpha Rack	720591734312	231894-B21

Technical Specifications

Control Panel	Library and drive status Move tape cartridges Load/unload tape drives Maintenance (diagnostics) Library configuration Statistics Inventory check Security level set: operator, user, service Mail slot access Offline/online Status Magazine removal/replacement																		
SCSI Interface	Ultra2 LVD SCSI, VHDCI interconnect																		
Form Factor	Rackmount 10U Tabletop																		
Dimensions	<table border="0"> <tr> <td style="vertical-align: top;">Height</td> <td style="vertical-align: top;">Rackmount</td> <td>17.5 in (44.45 cm)</td> </tr> <tr> <td></td> <td style="vertical-align: top;">Tabletop</td> <td>18.5 in (46.99 cm)</td> </tr> <tr> <td style="vertical-align: top;">Width</td> <td style="vertical-align: top;">Rackmount</td> <td>Chassis/TT Cover 16.7 in (42.42 cm) Front Panel 19 in (48.26 cm)</td> </tr> <tr> <td></td> <td style="vertical-align: top;">Tabletop</td> <td>Chassis/TT Cover 19 in (48.26 cm) Front Panel 19 in (48.26 cm)</td> </tr> <tr> <td style="vertical-align: top;">Depth</td> <td style="vertical-align: top;">Overall</td> <td>31.5 in (80.01 cm)</td> </tr> <tr> <td style="vertical-align: top;">Behind panel</td> <td></td> <td>30.3 in (76.96)</td> </tr> </table>	Height	Rackmount	17.5 in (44.45 cm)		Tabletop	18.5 in (46.99 cm)	Width	Rackmount	Chassis/TT Cover 16.7 in (42.42 cm) Front Panel 19 in (48.26 cm)		Tabletop	Chassis/TT Cover 19 in (48.26 cm) Front Panel 19 in (48.26 cm)	Depth	Overall	31.5 in (80.01 cm)	Behind panel		30.3 in (76.96)
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Capacity (native)	MSL5052SL Base Unit 5.72TB																		
Performance (native)	11MB/s per drive MSL5052SL Base Unit Supports up to 4 SDLT 110/220 GB drives for native transfer rates up to 158.4 GB/hour Maximum configuration (four modules with multi-unit scalability) Supports up to 16 SDLT 110/220GB drives for native transfer rates up to 633.6 GB/hour																		
Storage Capacity (compressed @ 2:1)	220GB per cartridge MSL5052SL Base Unit 52 slots (including two mail slots), for capacity of 11.44TB (2:1 compressed) Maximum Configuration 208 slots, for capacity up to 45.76TB (2:1 compressed) (four modules with multi-unit scalability)																		
Power Consumption	<table border="0"> <tr> <td style="vertical-align: top;">MSL5052SL Base Unit</td> <td>90 to 132V AC @ 47 to 63Hz 180 to 264V AC @ 47 to 63Hz</td> </tr> <tr> <td style="vertical-align: top;">Power Requirement</td> <td>1360 BTU's/hour (Typical) (400 Watts) 1530 BTU's/hour (Maximum) (450 Watts)</td> </tr> </table>	MSL5052SL Base Unit	90 to 132V AC @ 47 to 63Hz 180 to 264V AC @ 47 to 63Hz	Power Requirement	1360 BTU's/hour (Typical) (400 Watts) 1530 BTU's/hour (Maximum) (450 Watts)														
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Technical Specifications

Robotics Performance	Initialization time	240 sec
	Inventory time	110 sec
	Cartridge swap (drive to slot)	22 sec average
Reliability	MTBF	250,000 hours (100% duty cycle) (excludes drives)
	MSBF	2,000,000 robot load/unload cycles
Product Safety Requirements and Approvals	Safety EN60950/IEC950, UL, CSA/cUL, CE, VDE/TUV, Nordic (EMKO), GOST EMI, Class A FCC, C.I.S.P.R., ICES-003, CE, VCCI	
Warranty	1 year, on-site next-day response	
	Additional Warranty service protection can be purchased for all MSL5052SL DLT Library products. NOTE: Certain restrictions and exclusions apply. Consult the Hewlett-Packard Customer Support Center for details.	

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